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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,542	04/19/2004	William E. McKinzie III	39588.00002.CIP1	3879
36183	7590	07/12/2005	EXAMINER	
PAUL, HASTINGS, JANOFSKY & WALKER LLP			HAM, SEUNGSOOK	
P.O. BOX 919092				
SAN DIEGO, CA 92191-9092			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/828,542

Applicant(s)

MCKINZIE, WILLIAM E.

Examiner

Seungsook Ham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claim 29 ("a second cluster of vias, wherein the vias in the second cluster of vias are coupled proximate their first ends to the second conducting plane...and proximate the first conducting plane") must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-5, 12-21, 23-26, and 31-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 2 and 23, **"the combined inductance and capacitance of the resonator elements"** lacks antecedent basis. Moreover, "the resonator elements" is vague and indefinite as to whether it refers to "cluster resonator (see preamble)" or "a cluster of vias" and how they are structurally related to the elements in claim 1.

In claims 12 and 31, "the topology" lacks antecedent basis.

In claims 20, 21, 39 and 40, "the number and spacing of the vias of the cluster of vias" lacks antecedent basis.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-40 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-39 of copending Application No. 10/796,398. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are the same except in semantics. For example, "a cluster of vias" in the instant claim 1 is read on "a plurality of resonators" in copending claim 10. Moreover, "third plane" and "fourth plane" in the instant claim 1 is read on "a plane" in the copending claim 10.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8, 11-14, 17, 20-26, 28-33, 36, 39 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Arakawa et al. (US '929).

Arakawa et al. (figs. 6-8) discloses a printed circuit board with a cluster of vias comprising: first and second conducting planes 12b, 12c; a cluster of vias 16 of essentially uniform length oriented substantially normal to the conducting planes and interposed therebetween; a first conducting pad 14a (disposed on the conductive layer 12a) disposed in a third plane 12a parallel and proximate the first conducting plane 12b and coupled with the vias of the cluster of vias proximate their first ends (see fig. 7, via

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16 is coupled to the third plane 12a); a second conducting pad 14d disposed in a fourth plane 12d parallel and proximate the second conducting plane 12c and coupled with the vias of the cluster of vias proximate their second ends. It should be noted that the preamble, "a cluster resonator" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Regarding claims 2 and 23 (insofar as understood), the vias 16 inherently possesses inductance (i.e, conductive) and capacitance (see fig. 5D), thus it inherently provides a resonant shunt circuit.

Regarding claims 3, 4, 24 and 25, Arakawa et al. (fig. 7) shows the vias 16 (the vias 16 disposed on an insulating layer 11b of the cluster of vias are disposed alone a an interior region.

Regarding claims 5 and 26, Arakawa et al. (figs. 6-8) shows the interior vias comprise portions of transmission lines 18 passing electrical signals vertically through the cluster resonator (the signals pass through the vertical vias 16).

Regarding claims 6, 8, 11, and 28, Arakawa et al. (fig. 8) also shows the first and second conducting pads 14a, 14d is external relative to the first and second conducting planes.

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The subject matter of claims 12 and 31 is inherent since the device of Arakawa et al. is a symmetrical (i.e., balanced structure).

Regarding claims 17 and 36, Arakawa et al. (fig. 17A) shows the cluster of vias is disposed along a circular path.

The subject matter of claims 20, 21, 39 and 40 are inherent from the device of Arakawa et al. since Arakawa et al. teaches that the number and the spacing of the vias of the cluster vias can be adjusted to obtain desired characteristic (col. 12, line 66 – col. 13, line 5).

Regarding claim 22, Arakawa et al. (fig. 7) shows first ends of each via in the cluster of vias (the vias 16 disposed on the conductive layer 12b) coupled with the first conducting plane 12b, and a conducting pad 14d disposed in a third plane 12d parallel to and proximate the second conducting plane 12c and coupled to each via in the cluster of vias proximate their second ends.

Regarding claims 29 and 30, Arakawa et al. (fig. 8) also shows a second cluster of vias 17, wherein the vias in the second cluster of vias are coupled proximate their first ends to the second conducting plane 12c, and proximate their second ends to a second conducting pad 15a disposed in a fourth plane 12a parallel to and proximate the first conducting plane 12b.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 9, 10, 15, 16, 18, 19, 27, 34, 35, 37 and 38 are rejected under 35

U.S.C. 103(a) as being unpatentable over Arakawa et al. (US '929).

Regarding claims 7, 9, 10, and 27, providing the conducting pads internal relative to the first and second conducting planes are considered as an obvious design modification since Arakawa et al. (fig. 35) shows the cluster of vias can be disposed internal relative to two conducting planes 12a, 12d.

Regarding claims 15, 16, 34 and 35, it would have been obvious to incorporate the printed circuit board device of Arakawa et al. in a multi-chip module or a semiconductor chip since it is well known in the art that printed circuit board can be used in a chip assembly.

Regarding claims 18, 19, 37 and 38, placing the cluster of vias in a polygonal or elliptical path is considered as an obvious modification in order to achieve a desired signal path.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamamoto et al. (fig. 2) discloses a via disposed internal relative to two conducting planes;

Riad (figs. 12A-14) discloses resonant vias disposed in different conductive planes; and


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Devoe et al. (figs. 1a-1i) discloses a cluster of vias disposed internal or external relative to two conducting planes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (571) 272-2405. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Seungsook Ham
Primary Examiner
Art Unit 2817

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